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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,770	09/22/2003	Shinji Hamada	F-7967	1360

28107 7590 06/29/2006
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EXAMINER

ECHELMEYER, ALIX ELIZABETH

ART UNIT PAPER NUMBER

1745

DATE MAILED: 06/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/667,770

Applicant(s)

HAMADA ET AL.

Examiner

Alix Elizabeth Echelmeyer

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9-22-03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Acknowledgment of Applicants' claim to priority is made.

Claim Objections

2. Claim 12 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim 11. See MPEP § 608.01(n). Accordingly, the claim has not been further treated on the merits.

Claim Rejections - 35 USC § 112

3. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what amounts of deflection and pressure are acceptable.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Ikoma et al. (US Patent Number 5,663,007).

Ikoma et al. teach the use of a cylindrical or rectangular casing for a sealed storage battery (column 1 lines 23-30). Ikoma et al. further teach projecting ridges on the longer side faces of the case (Figure 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5, 10 and 11 (as dependent on claim 5) are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikoma et al. in view of Asahina et al. (US Pre-Grant Publication 2003/0027040).

The teachings of Ikoma et al. as discussed above are incorporated herein.

Ikoma teaches the limitations of claim 1 but fails to teach that the cells have an electrode projection on the bottom plate.

Asahina et al. teach one electrode at the top of each cell and another at the bottom. This allows for directly joining the connection protrusions, which leads to lower internal resistance and greater output ([0014]).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to put electrodes at both the top and bottom of each cell so that the could be directly joined and the system would have lower internal resistance and greater output.

As for claim 10, Asahina teaches that the attachment of the battery cells in an end-to-end fashion. Asahina further teaches a gap between the cells when they are connected ([0050]). This gap allows for space for U-shaped members to be placed between the cells in order to ensure better sealing.

It would be desirable to leave space between the cells as taught by Asahina et al. because the space could be used for members to be employed to ensure good sealing.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to leave space between the cells in order to allow room for additional parts that would ensure good sealing of the lid or bottom to the casing.

6. Claims 2, 3, 4, 6, 7, 9 and 11 (as dependent on 7) are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikoma et al. in view of Asahina et al. and Masuda et al. (US Patent Number 4,65,932).

The teachings of Ikoma et al. and Asahina et al. as discussed above are incorporated herein.

Regarding claims 2 and 6, Ikoma et al. fails to teach the laminated electrode plate assembly such that substrates of the positive and negative electrode plates touch

the sides of the battery casing and that there is a gasket between the bottom of the case and the edges of the plates.

Asahina et al. teach the case is joined to the collectors of the electrode plate assembly ([0015], [0017]).

It would be desirable to attach the electrode assembly to the case in order to ensure that the assembly does not shift, especially if the battery was for use in a portable device.

Ikoma et al. in view of Asahina et al. fail to teach a gasket at the bottom edge of the plates.

Masuda et al. teach an insulating gasket between the casing and the plates (Figure, column 6 lines 8-18).

It would be desirable to use a gasket to insulate the plates in order to retain the heat of the reaction to maintain the efficiency of the battery.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to attach the substrates of the plates to the sides of the casing as taught by Asahina et al. and to use a gasket between the edge of the plates and the bottom of the case as taught by Masuda et al. in order to ensure that the electrode plate assembly does not shift and to insulate the assembly.

With further regard to claim 6, Asahina et al. teach that the current collector plates have connection projections that are sealed to the case and extend beyond it (abstract).

Regarding claim 3, Masuda et al. teach a flange in the sealing plate that is attached to the gasket from claim 2. The sealing part of the case comes up and around the flange (Figure).

Regarding claim 4, Ikoma et al. teach that the projecting ridges are discontinued by the opening of the case (Figure 1).

As for claims 7 and 11, Asahina et al. teach one electrode at the top of each cell and another at the bottom. This allows for directly joining the connection protrusions, which leads to lower internal resistance and greater output ([0014]).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to put electrodes at both the top and bottom of each cell so that the could be directly joined and the system would have lower internal resistance and greater output.

As for claim 9, Ikoma et al. teach that the lid is welded to the case (abstract). Ikoma et al. further teach that the ribs of the lid correspond to the ribs on the casing (column 5 lines 9-11).

It would be desirable to make the ribs extend continuously from the casing to the lid because it might allow for better cooling in the battery of Ikoma et al.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to extend the ribs on the case of Ikoma et al. to meet the ribs of the lid in order to provide better cooling.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being obvious over Ikoma et al. in view of Morishita et al. (US Patent Number 5,747,186).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Ikoma et al. teach the ribs on the casing of the battery but fail to teach that they will withstand certain operating pressures in the battery.

Morishita et al. teach that the batteries experience a high-pressure state during charging and discharging (column 1 lines 54-56). Morishita et al. further teach that the battery having this type of casing can withstand certain pressures (column 6 lines 56-65).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to ensure that the battery could withstand certain pressures associated with charging and discharging in order to ensure the safe operation of the battery.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yamaguchi et al., US Patent Number 6,806,003.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alix Elizabeth Echelmeyer whose telephone number is 571-272-1101. The examiner can normally be reached on Mon-Fri 7-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Alix Elizabeth Echelmeyer
Examiner
Art Unit 1745


PATRICK JOSEPH RYAN
SUPERVISORY PATENT EXAMINER

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